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the desired pieces were detached. It may, therefore, be probable from the fact, that the melting point of copper is about 1000° C. to 1398° , there was sufficient heat generated by fires, used in above-mentioned method, to smelt the small points of copper attached to the larger masses, and that these people possessing the intelligence and quick perception of the Indian races, were led to notice and utilize it in smelting copper and casting their work. The artistic forms and finish of their copper implements, whether cast or hammered, cannot fail to impress the observer that a race of men existed in the early history of our continent, whose origin is enveloped in mystery, and whose skill rivals man of historic times, assisted by all the inventions of this mighty age of Iron.

The Tritubercular Type of Superior Molar Tooth.—Prof. COPE made some observations on the trituberculate type of superior molar tooth among the mammalia. He remarked that it is now apparent that the type of superior molar tooth which predominated during the Puerco epoch was triangular; that is, with two external, and one internal tubercles. Thus of forty-one species of Mammalia of which the superior molars are known, all but four have three tubercles of the crown, though of these thirty-seven triangular ones, those of three species of *Periptychus* have a small supplementary lobe on each side of the median principal inner tubercle.

This fact is important as indicating the mode of development of the various types of superior molar teeth, on which we have not heretofore had clear light. In the first place, this type of molar exists to-day only in the insectivorous and carnivorous Marsupialia; in the Insectivora, and the tubercular molars of such Carnivora as possess them (excepting the plantigrades). In the Ungulates the only later forms of it in the Eocene are to be found in the molars of the *Coryphodontidæ* of the Wasatch, and *Dinocerata* of the Bridger Eocenes. In later epochs it is chiefly seen only in the last superior molar.

It is also evident that the quadritubercular molar is derived from the tritubercular by the addition of a lobe of the inner part of a cingulum of the posterior base of the crown. Transitional states are seen in some of the *Periptychidæ* (*Anisonchus*) and in the sectorials of the *Procyonidæ*.

The Spinal Chord of Batrachia and Reptilia.—Dr. HARRISON ALLEN called attention to the characters furnished by the spinal chord in the systematic study of batrachians and reptiles. In making a resumé of the researches of Stieda Lüderitz, S. H. Gage and J. J. Mason he had formulated the following structural features which may be added to those characters already employed by systematists. In batrachians, as illustrated in *Rana*, *Melopoma* and *Siren* the connective is seen about the central canal to be of unusual development, and in *Siren* to embrace the entire chord in a conspicuous cortical layer. In addition to these features, connective-tissue corpuscles are sparsely distributed

through the chord when studied in transverse sections. The posterior columns are projected above the plane of the lateral columns and exhibit distinct differences in the arrangement of nerve-fibres. In lacertilians and crocodilians the commissures are perforated longitudinally by a pair of columns of nerve-fibres. In ophidians the posterior nerve-roots are seen to be rudimentary or absent and when present to tend to arise from the *cervix cornu* of the posterior horn of gray matter. In chelonians the motor-cells are few in number; the anterior median fissure is of great width, the commissure of relatively great size, and the reticular fibres lying to the lateral aspect of the gray columns are unusually well developed.

FEBRUARY 27.

The President, Dr. LEIDY, in the chair.

Thirty-seven persons present.

Walter Rogers Furness was elected a member.

On Dinodipsas and Causus.—Prof. COPE drew attention to a recent important discovery made by Prof. Peters, of Berlin, of the new genus of venomous snakes, *Dinodipsas*. He stated that he regarded the genus as pertaining to the *Causidæ*, a family he had proposed as a subfamily in his first paper read before the Academy in 1859. As the only genus heretofore known, *Causus*, is African, the statement of Peters that *Dinodipsas* is South American, adds an important fact to geographical zoölogy. Prof. Cope then corrected a statement made by Peters in his *Herpetology of the Reise nach Mozambique* (1882), that he (Prof. Cope) had referred *Causus* to the Vipers. In 1859 he had divided the venomous snakes with vertical and hinged maxillary bone, into the subdivisions of the rattlesnakes, the vipers, the *Atractospidines* and the *Causines*. He then designated the entire group *Viperidæ* after Bonaparte, and had not until later used Duméril and Bibron's term *Solenoglyphæ* for that division. But this did not justify Peters in stating that he had referred the genus *Causus* to the Vipers, and that he, Peters, was the author of the separate family to receive that genus and *Dinodipsas*, the "Vipernattern."

He also corrected some other references to himself by Prof. Peters in the *Reise nach Mozambique*. In one of these, Peters had supposed him to refer to a combination of the genera *Breviceps* and *Chelydobatrachus* by Peters, when he had really separated them. Prof. Cope said that his language referred to their union in the *same family* by Peters, which he did not approve.

Prof. Peters also states that the peculiarities of the tongue in the genus *Hemisus*, described by Steindachner and Prof. Cope, are due to mutilation. Prof. Cope could not coincide with this view, and regards the structures described as normal.

The following were ordered to be printed:—